



CONSTRUCTION OF COTTAGES FROM GAS AND GAS CONCRETE ABOUT THE SECRETS OF HOUSE CONSTRUCTION

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Abstract: The topic covers issues related to the secrets of the production of a wide range of materials used in modern cottage construction, including brick and aerated concrete. A scientifically and practically stable analysis was carried out due to the high thermal inertness and strength of brick, and the light weight and high thermal insulation of aerated concrete. By correcting the materials of construction processes, carefully developing the architectural plan, applying protection against moisture and heat transfer. According to research sources, the harmonious use of brick and aerated concrete is of great importance in the construction of energy-efficient, productive and environmentally friendly houses.

Keywords: Aerated concrete, brick, building materials, construction processes, heat and humidity, Cottage construction.

Introduction: The recent development of private housing—especially cottages—and the popularization and construction of residential buildings has raised the issue of material selection. On the one hand, both traditional brick and modern aerated concrete (aerated concrete) are used for low-rise residential buildings. Both materials have their own characteristics, advantages and disadvantages; their correct selection and designation are crucial. Brick is a common building material with high compressive strength, good mechanical strength and thermal inertia. Aerated concrete is characterized by light weight, good thermal insulation and easy workability; however, its load-bearing capacity and surface protection require special attention. The practice of using brick and aerated



concrete in mixed systems - for example, aerated concrete as internal energy and brick as facade or single walls - together effectively helps, but in such a combination, the material components, the connection and aerated concrete and the moisture/heat components, The issue of durability does not depend only on the nominal strength of the material: the solution, the quality of the foundation, moisture protection, heat and waterproofing, details/door surrounds, water supply and installation quality also play an important role. In the continental climate of Uzbekistan and the climate (seasonal changes in humidity, warm winter-snow and summer temperature changes) the thermal-humidity properties of wall systems, thermal bridges and freeze-thaw cycles can be improved.

Literature review and methodology

In recent decades, brick and aerated concrete have been widely studied in scientific research on building materials from technical, economic and economic points of view. In foreign sources [1; 2; 3], the strength, long-term cleanliness and thermal inertness of brick are highly appreciated. At the same time, there are also concerns about the high energy consumption of the production process and the release of toxic substances into the environment. Aerated concrete [4; 5] is a modern lightweight building material that is rapidly gaining popularity. It has good permeability, light weight, and wide load-bearing capacity. However, to some extent, the mechanical strength of aerated concrete is lower than that of brick and the problems of moisture absorption. In a study on the conditions of Uzbekistan and Central Asia [6; 7], the issue of choosing materials suitable for climatic conditions was raised. It was noted that the variability of cold and hot seasons, problems with thermal bridges and moisture directly affect the quality and durability of construction. Therefore, in practice, the use may arise as a result of the combined use of brick and aerated concrete. Many scientific sources and building codes [8; 9] emphasize the importance of thermal insulation, waterproofing, solid and properly solid solutions in improving the durability of cottages built from brick and



aerated concrete. This indicates that scientific and practical experience has been accumulated in the literature on these materials. Research methodology

1. Literature analysis - construction and scientific articles, technical regulations were studied.

2. Comparison - technical and physical indicators of brick and aerated concrete (thermal conductivity, strength, moisture resistance and service life) were compared.

3. Systematic maintenance - the impact on the durability of houses (design solution, construction technology, climatic conditions, quality of service) was comprehensively assessed.

4. Study of practical experiences – additional problems, issues and solutions of materials were studied on the example of cottages in production and production practice.

5. Expertise – the opinions of civil engineers and practicing craftsmen were analyzed and practical recommendations for safety control were developed. The results of the study show that brick and aerated concrete can be considered as complementary materials in the construction of a cottage. The high strength and strength indicators of brick make it convenient for manufacturing and load-bearing structures, while the light weight and high thermal insulation of aerated concrete provide effective results in the production of internal and thermal energy. During the discussion, it was found that the combined use of both materials gives advantages:

- heat saving, which leads to energy efficiency;
 - the service life of houses is extended;
 - construction is increased;
 - the use of environmentally friendly materials is created.

There is also something. Aerated concrete can lose its strength faster with high humidity, so it needs additional protection. Brick, on the other hand,



is relatively expensive and heavy, which puts a load on the foundation. Therefore, when loading materials, it is important to choose the optimal option.

Compliance with regulatory documents and quality control during the production process, proper operation of heat and waterproofing materials, ensuring their direct storage.

Conclusion:

Based on the above analysis, it is possible to come to the following conclusions:

1. Brick and aerated concrete are considered the most optimal materials for cottage construction. Their technical and equipment characteristics make them widely used in residential buildings.
2. The combination of materials increases efficiency. Brick masonry is suitable for internal partitions that require load-bearing energy, and aerated concrete is suitable for internal partitions that require thermal insulation.
3. It is necessary to take into account climatic conditions. In a continental climate like Uzbekistan, additional measures are required against moisture, cold and heat fluctuations.
4. It is important to follow the construction. A correctly laid, high-quality foundation, insulation, protection will increase the service life of the house.
5. Practical says:
 - o about heat and waterproofing water when using brick and aerated concrete;
 - o quality certification of building materials;
 - o energy accounting in the management system;
 - o construction under supervision.



In general, brick and aerated concrete control cottages can be mobile, energy-efficient and environmentally friendly. With proper construction, such houses will last a long time and are a reliable solution for modern housing.

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